What is claimed is:

1. A computer implemented method of analyzing a signal comprising:

inputting the signal;

extracting a collection of Intrinsic Mode Functions from the signal via Empirical Mode Decomposition;

normalizing the Intrinsic Mode Functions; and

transforming the normalized Intrinsic Mode Functions with a Hilbert Transform.

2. The computer implemented method as in claim 1, further comprising:

analyzing the normalized Hilbert Transform to determine Instantaneous Frequency.

3. The computer implemented method as in claim 1, said step of normalizing the Intrinsic Mode Function including:

identifying local maximum values in one of the Intrinsic Mode Functions;

constructing an envelope signal from the identified local maximum values;

dividing the Intrinsic Mode Function by the envelope signal; and

repeating the above steps for all of the Intrinsic Mode Functions.

4. The computer method as in claim 3, wherein constructing the envelop of the signal includes:

connecting all the local maximum values with a cubic spline curve.

5. The computer method as in claim 1, further comprising:

calculating an error index according to the following equation:

$E(t) = [\text{abs}(\text{Hilbert Transform}(y(t))) - 1]^2$, wherein $y(t)$ is the normalized Intrinsic Mode Function.

6. The computer implemented method as in claim 1, said step of normalizing the Intrinsic Mode Function including:

transforming one of the Intrinsic Mode Functions with a Hilbert Transform;

dividing the Intrinsic Mode Function by the Hilbert Transform; and

repeating the above steps for all the Intrinsic Mode Functions.

7. A computer implemented method of analyzing a signal comprising:

inputting the signal;

extracting a collection of Intrinsic Mode Functions from the signal via Empirical Mode Decomposition;

normalizing the Intrinsic Mode Functions; and

transforming the normalized Intrinsic Mode Functions with a Hilbert Transform;

calculating an error index according to the following equation:

$E(t) = [\text{abs}(\text{Hilbert Transform}(y(t))) - 1]^2$, wherein $y(t)$ is the normalized Intrinsic Mode Function.

8. The computer implemented method as in claim 7, further comprising:

analyzing the normalized Hilbert Transform to determine Instantaneous Frequency.

9. The computer implemented method as in claim 7, said step of

normalizing the Intrinsic Mode Function including:

identifying local maximum values in one of the Intrinsic Mode Functions;

constructing an envelope signal from the identified local maximum values;

dividing the Intrinsic Mode Function by the envelope signal; and

repeating the above steps for all of the Intrinsic Mode Functions.

10. The computer method as in claim 9, wherein constructing the envelop of the signal includes:

connecting all the local maximum values with a cubic spline curve.

11. The computer implemented method as in claim 7, said step of normalizing the Intrinsic Mode Function including:

transforming one of the Intrinsic Mode Functions with a Hilbert Transform;

dividing the Intrinsic Mode Function by the Hilbert Transform; and

repeating the above steps for all the Intrinsic Mode Functions.